

**Notice of Allowability**

Application No.

10/722,915

Examiner

Qutub Ghulamali

Applicant(s)

SAWADA ET AL.

Art Unit

2611

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to amendment filed 5/14/2007.
2. ☒ The allowed claim(s) is/are 1-14.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### **DETAILED ACTION**

1. This Office Action is responsive to the Remarks/Amendment filed on 05/14/2007.
2. Applicant's compliance with claim objections and § 112 rejections as cited in the previous office action, is acknowledged. The amendment considered acceptable.

### ***Response to Remarks/Amendment***

3. Applicant's amendment/remarks filed 05/14/2007, have been fully considered and as a result claims 1-14 are now indicated allowable.
4. Claims 1-14 allowed.

### **Reason For Allowance**

5. The following is an examiner's statement of reasons for allowance: The prior art of record in combination with other claimed limitations neither teaches nor renders obvious a method of training equalizer comprising:
  - a) utilizing, as a restricted coefficient updating vector applied for updating the multiplication coefficient for each tap of a FIR filter, a vector obtained from projecting, onto a plane perpendicular to a predetermined restricting conditioning vector, a coefficient updating vector determined based on an equalizer error between the output of the FIR equalizer and a reproduction output determined therefrom, and a delayed input value for each tap of the FIR equalizer; and

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b) utilizing, as the predetermined restricting conditioning vector, a coefficient vector comprising the multiplication coefficients for the equalizer obtained upon calculating the equalizer error, as recited in claims 1, 4 and 5.

b) utilizing, as the predetermined restricting conditioning vector, a vector which is a difference between a coefficient vector comprising the multiplication coefficients for the FIR equalizer obtained upon calculating the equalizer error and another coefficient vector immediately subsequent thereto obtained in the same condition as recited in claim 2.

b) utilizing, as the predetermined restricting conditioning vector, a vector which is a difference between a subsequent coefficient vector obtained in the same condition immediately subsequent to and an antecedent coefficient vector obtained in the same condition immediately antecedent to a reference coefficient comprising the multiplication coefficients for the equalizer obtained upon calculating the FIR equalizer error as recited in claim 3.

Claim 6, in combination with other claimed limitations, said training part utilizes, as the restricting conditioning vector, a vector which is a difference between a subsequent coefficient vector obtained in the same condition immediately subsequent to and an antecedent coefficient vector obtained in the same condition immediately antecedent to a reference coefficient comprising the multiplication coefficients for the equalizer obtained upon calculating the FIR equalizer error.

Such limitations as recited in these claims above, are neither anticipated nor rendered obvious by prior art.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014. The examiner can normally be reached on Monday-Friday, 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

QG.  
May 23, 2007.

  
**MOHAMMED GHAYOUR**  
SUPERVISORY PATENT EXAMINER